

Name: _____

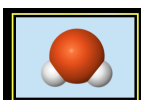
Build a Molecule Activity Sheet¹

Learning Goals:

1. Describe the difference between a molecule name and a chemical formula.
2. Distinguish between the coefficient and subscript in a chemical formula.
3. Use pictorial representations of molecules to generate chemical formulas.

Open Play

Open the simulation [Build a Molecule](#) for 5 min and discover how it works.



Single **First Screen: Single**

1. Make a molecule:

- a. How do you know you made a molecule? _____
- b. Write the molecule **name** of some molecules you made (ex. Water).

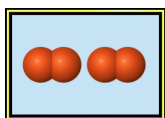
_____	_____
_____	_____
_____	_____

2. Molecule Names and Chemical Formulas:

- a. Compare the name and chemical formula for some molecules:

Molecule Name	Drawing	Chemical Formula

¹ Original activity: Denison, C. and Moore, E. (2011). [Build a Molecule - Molecular Formulas and Coefficients](#). In the PhET website. License CC BY 4.0. [Make a copy of this sheet as a Google Doc](#).



Multiple

Second Screen: Multiple

3. Make Many
 - a. Fill all the collection boxes and then complete the questions for each Goal.

Goal: 4H_2

Goal: 4H_2	
Draw it!	
What does the big '4' in 4H_2 mean?	
What does the little '2' in 4H_2 mean?	

Goal: 2CO₂

Draw it!

What does the big '2' in 2CO₂ mean?

What does the little '2' in 2CO₂ mean?

Goal: 2O₂

Draw it!

What does the big '2' in 2O₂ mean?

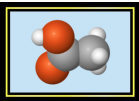
What does the little '2' in 2O₂ mean?

Goal: 2NH₃

Draw it!

What does the big '2' in 2NH₃ mean?

What does the little '3' in 2NH₃ mean?



Playground Third Screen Challenge: Playground

4. What's the biggest molecule you can make?
 - a. Molecule Name: _____
 - b. Chemical formula: _____

5. Can you make a molecule that can be broken into smaller molecules?
 - a. Big molecule **name**: _____
 - b. Big molecule **chemical formula**: _____
 - c. Smaller molecule **names**: _____
 - d. Smaller molecule **chemical formulas**: _____